

1 What is claimed is:

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3 1. In a storage system employed in a client-server network, an interface operating
4 between a first protocol and a second protocol comprising:

5 means for receiving first information in accordance with said first protocol from
6 said client;

7 means, operatively coupled to said receiving means, for determining that said first
8 protocol is acceptable to allow further processing of said first information in said system;

9 means, responsive to operation of said determining means, for translating said
10 first information into second information compatible with said second protocol;

11 object manager means operative in accordance with said second protocol;

12 means for forwarding said second information to said object manager means and,
13 responsive to said object manager means managing said second information, for
14 receiving a managed response thereto from said object manager means;

15 means for reverse-translating said managed response into an equivalent response
16 compatible with said first protocol; and,

17 means for forwarding said equivalent response to said client.

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19 2. The interface of claim 1 and wherein said first protocol is CIM/XML/HTTP.

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21 3. The interface of claim 2 and wherein said second protocol is WMI/DCOM.

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23 4. The interface of claim 1 and wherein said determining means further comprises:

1 means for establishing a plurality of acceptable protocols;
2 means for comparing said first protocol against said plurality of acceptable
3 protocols seriatim until said first protocol matches one of said plurality of protocols; and,
4 means, responsive to operation of said comparing means for allowing said
5 further processing.

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7 5. The interface of claim 4 and wherein the result of said operation of said
8 comparing means not obtaining a match is that said further processing is not allowed.

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10 6. The interface of claim 4 and wherein said plurality of protocols includes:
11 CIM/XML/HTTP and SOAP/HTTP/WBEM.

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13 7. The interface of claim 1 and wherein said translating means includes said reverse-
14 translating means.

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16 8. The interface of claim 6 and wherein said translating means includes said reverse-
17 translating means.

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19 9. The interface of claim 3 and wherein said determining means further comprises:

20 means for establishing a plurality of acceptable protocols;

21 means for comparing said first protocol against said plurality of acceptable
22 protocols seriatim until said first protocol matches one of said plurality of protocols; and,

means, responsive to operation of said comparing means for allowing said further processing.

10. In a storage system employed in a client-server network, a method for interfacing between a first protocol and a second protocol comprising:

receiving first information in accordance with said first protocol from said client; determining that said first protocol is acceptable to allow further processing of said first information in said system;

translating said first information into second information compatible with said second protocol;

establishing an object manager operative in accordance with said second protocol; forwarding said second information to said object manager and, responsive to said object manager managing said second information, receiving a managed response thereto from said object manager;

reverse-translating said managed response into an equivalent response compatible with said first protocol; and,

forwarding said equivalent response to said client.

11. The method of claim 10 and wherein said first protocol is CIM/XML/HTTP.

12. The method of claim 11 and wherein said second protocol is WMI/DCOM.

1 13. The method of claim 1 and wherein said determining further comprises:
2 establishing a plurality of acceptable protocols;
3 comparing said first protocol against said plurality of acceptable protocols
4 seriatim until said first protocol matches one of said plurality of protocols; and,
5 allowing said further processing.

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7 14. The method of claim 13 and wherein the result of said operation of said
8 comparing not obtaining a match is that said further processing is not allowed.

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10 15. The method of claim 13 and wherein said plurality of protocols includes:
11 CIM/XML/HTTP and SOAP/HTTP/WBEM.

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13 16. The method of claim 10 and wherein said translating includes said reverse-
14 translating.

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16 17. The method of claim 15 and wherein said translating includes said reverse-
17 translating.

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19 18. The method of claim 12 and wherein said determining further comprises:
20 establishing a plurality of acceptable protocols;
21 comparing said first protocol against said plurality of acceptable protocols
22 seriatim until said first protocol matches one of said plurality of protocols; and,
23 allowing said further processing.

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3 19. A computer program product for use on a computer to be operated within a client-
4 server network employing a storage area network including at least one storage system,
5 said computer program product functioning to interface between a first communication
6 protocol and a second communication protocol and comprising a computer usable
7 medium having computer readable program code thereon, said computer readable
8 program code comprising:

9 program code for receiving first information in accordance with said first protocol
10 from said client;

11 program code for determining that said first protocol is acceptable to allow further
12 processing of said first information in said system;

13 program code for translating said first information into second information
14 compatible with said second protocol;

15 program code for establishing an object manager operative in accordance with
16 said second protocol;

17 program code for forwarding said second information to said object manager and,
18 responsive to said object manager managing said second information, receiving a
19 managed response thereto from said object manager;

20 program code for reverse-translating said managed response into an equivalent
21 response compatible with said first protocol; and,

22 program code for forwarding said equivalent response to said client.
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1 20. The computer program product of claim 19 and wherein said first protocol is
2 CIM/XML/HTTP.

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4 21. The computer program product of claim 20 and wherein said second protocol is
5 WMI/DCOM.

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7 22. The computer program product of claim 19 and wherein said program code for
8 determining further comprises:

9 program code for establishing a plurality of acceptable protocols;
10 program code for comparing said first protocol against said plurality of
11 acceptable protocols seriatim until said first protocol matches one of said plurality of
12 protocols; and,
13 program code for allowing said further processing.

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15 23. The computer program product of claim 22 and wherein the result of operation of
16 said program code for comparing not obtaining a match is that said further processing is
17 not allowed.

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19 24. The computer program product of claim 22 and wherein said plurality of
20 protocols includes: CIM/XML/HTTP and SOAP/HTTP/WBEM.

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22 25. The computer program product of claim 19 and wherein said program code for
23 translating includes said program code for reverse-translating.

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2 26. The computer program product of claim 24 and wherein said program code for
3 translating includes said program code for reverse-translating.

4
5 27. The computer program product of claim 21 and wherein said program code for
6 determining further comprises:

7 program code for establishing a plurality of acceptable protocols;

8 program code for comparing said first protocol against said plurality of
9 acceptable protocols seriatim until said first protocol matches one of said plurality of
10 protocols; and,

11 program code for allowing said further processing.
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14 28. Apparatus to be operated within a client-server network employing a storage area
15 network including at least one storage system, said apparatus functioning to interface
16 between a first communication protocol and a second communication protocol and
17 comprising:

18 first information receiver for receiving first information in accordance with said
19 first protocol from said client;

20 first protocol acceptor for determining that said first protocol is acceptable to
21 allow further processing of said first information in said system;

22 first information translator for translating said first information into second
23 information compatible with said second protocol;

10 29. The apparatus of claim 28 and wherein said first protocol is CIM/XML/HTTP.
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12 30. The apparatus of claim 29 and wherein said second protocol is WMI/DCOM.
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14 31. The apparatus of claim 28 and wherein said first protocol acceptor for
15 determining further comprises:
16 plurality of protocols acceptor for establishing a plurality of acceptable
17 protocols;
18 a comparator for comparing said first protocol against said plurality of
19 acceptable protocols seriatim until said first protocol matches one of said plurality of
20 protocols; and,
21 further processing apparatus for allowing said further processing.

32. The apparatus of claim 31 and wherein the result of operation of said comparator not obtaining a match is that said further processing is not allowed.

33. The apparatus of claim 31 and wherein said plurality of protocols includes: CIM/XML/HTTP and SOAP/HTTP/WBEM.

34. The apparatus of claim 28 and wherein said first information translator for translating includes said reverse translator for reverse-translating.

35. The apparatus of claim 26 and wherein said first information translator for translating includes said reverse translator for reverse-translating.

36. The apparatus of claim 30 and wherein said first protocol acceptor for determining further comprises:

plurality of protocols acceptor for establishing a plurality of acceptable protocols;

a comparator for comparing said first protocol against said plurality of acceptable protocols seriatim until said first protocol matches one of said plurality of protocols; and,

further processing apparatus for allowing said further processing.